



Military Sniper Rifle
MSG 90



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MSG 90

Military Sniper Rifle



Instruction Manual



Heckler & Koch, Inc.
U.S.A.

**WARNING: READ ALL INSTRUCTIONS BEFORE
HANDLING & USING THIS FIREARM.**

Safety Rules

PLEASE READ THIS BEFORE HANDLING YOUR FIREARM.

The following safety rules are placed in this manual by Heckler & Koch, Inc. as an important reminder that firearms safety is your responsibility. Firearms can be dangerous and can potentially cause serious injury, damage to property or death, if handled improperly

1. Never point a firearm at anyone, or in any direction other than a safe one, i.e., downrange
2. Always treat all firearms as if they were loaded.
3. Keep your finger off the trigger until your sights are on the target.
4. Keep your finger off the trigger while loading or unloading the pistol.
5. Keep your finger off the trigger while pulling pistol out of the holster or holstering.
6. Be sure of your target and the back stop beyond.
7. Never give to or take a firearm from anyone unless the action is open.
8. Be sure that the ammunition you are using is factory loaded and is not damaged in anyway.
9. Before firing, remove the magazine from the weapon, lock the bolt to the rear and check the barrel of your unloaded firearm for any possible obstructions.
10. Before firing any firearm unfamiliar to you, make sure that you understand how it functions. Unfamiliarity can cause serious accidents. Attend a certified training course on any firearm which you intend to use or with which you are not sufficiently familiar.
11. Wear hearing protection and eye protection when shooting your firearm.
12. Keep your hands and fingers away from the muzzle to avoid injury or burns.
13. Firearms and ammunition should be stored separately beyond the reach of children and untrained or irresponsible adults.
14. Avoid the use of alcoholic beverages before and during any shooting.

REMEMBER: A FIREARM HAS THE CAPABILITY OF TAKING YOUR LIFE OR THE LIFE OF SOMEONE ELSE! BE CAREFUL WITH YOUR FIREARM – AN ACCIDENT IS ALMOST ALWAYS THE RESULTS OF NOT FOLLOWING BASIC SAFETY RULES.

Technical data

Dimensions

Caliber.....	7.62 mm x 51
Length of weapon.....	1165 mm
Width of weapon.....	65 mm
Height of weapon (w/ Telescopic sight).....	260 mm
Length of barrel.....	600 mm

Weights

Weapon w/o magazine and bipod.....	6.4 kg
Telescopic sight w/ mount.....	0.780 kg
Bipod.....	0.18 kg
Magazine for 5 rounds.....	0.104 kg
Magazine for 20 rounds.....	0.14 kg

Further specifications

Sighting system, optical.....	Telescopic sight, 10x, 10 settings, 100-1000 m elevation and windage adjustable
Mode of fire.....	Single shot
Operation principle.....	Blowback action
Bolt system.....	Recoil-operated roller-locked
Ammunition feed.....	Magazines for 5 & 20 cartridges
Trigger pull.....	Approx. 15 N
Adjustment of butt stock length.....	40 mm
Vertical adjustment of cheekpiece.....	40 mm

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Brief Description of the MSG90 Military Sniper Rifle

General information

The design/construction features and operational principle of the MSG 90 Military Sniper Rifle are identical with those of the well-known small arms of the HK weapons family.

The extraordinary conditions of a sniper's combat mission call for a special weapon which can be unrestrictedly used against single and multiple target objects because of its outstanding accuracy and other important features, enabling the sniper to answer the purpose of his task.

Main features of the MSG 90:

- Semi-automatic rifle for single fire with recoil-operated delayed roller-locked blowback bolt system.
- Extraordinarily sturdy and durable weapon construction
- Low noise bolt locking forward assist
- Let-off trigger with approx. 15 N trigger pull weight
- Vertically adjustable trigger shoe for variable widening of the trigger.
- Butt stock with lengthwise adjustable butt cap and vertically adjustable cheek-piece
- Hand guard with T-way for mounting a bipod or for fixing a firing sling
- 5- or 20-round magazine at option.



Fig.1: MSG 90 Military Sniper Rifle

Harmonizing the telescopic sight

If zeroing shows that a correction is needed this is done by re-adjusting the vertical or lateral alignment of the telescopic sight (i.e. elevation and windage).

The elevation adjuster is mounted on top of the telescopic sight



Fig. 37: Telescopic sight, top view

The windage adjustment facility is located on the right-hand side of the telescopic sight.

Attaching and detaching the telescopic sight

To attach the telescopic sight with mount onto the weapon, press-clamping lever of the mount downward until catch engages firmly. Place telescopic sight mount in the recesses on top of the receiver and lift the clamping lever.



Fig. 38: Attaching the telescopic sight

To detach the mount, press clamping lever downwards again and take off telescopic sight mount.

Prior to safekeeping and storing of the telescopic sight and mount, put clamping lever upwards to relieve the spring of its load.

Stripping the pistol grip with trigger assembly

Use the Allen key to undo the trigger shoe. Set safety/fire selector lever vertical, and draw it out to the right. Remove safety axle to the left. Take off trigger assembly housing.

It is not permitted to strip the trigger assembly housing any further. If it is extremely dirty, the housing can be washed out with a suitable cleaning fluid.

Re-assembling the weapon

Push the hand guard onto the barrel from the muzzle and, press in the bolt with a screwdriver, and turn it by 90 degrees.

Push the re-assemble bolt unit into the receiver (when doing so, the locking rollers must be located inside the bolt head).

Fit the grip assembly and press in the retaining pin (safety/fire selector lever set to "0" = Safe).

Push butt stock onto the receiver and press in the retaining pins.

Assembly groups

1. Receiver with barrel, cocking device, telescopic sight mounting and telescopic sight
2. Bolt system
3. Pistol grip with trigger assembly
4. Back plate with butt stock
5. Hand guard
6. Magazine
7. Bipod

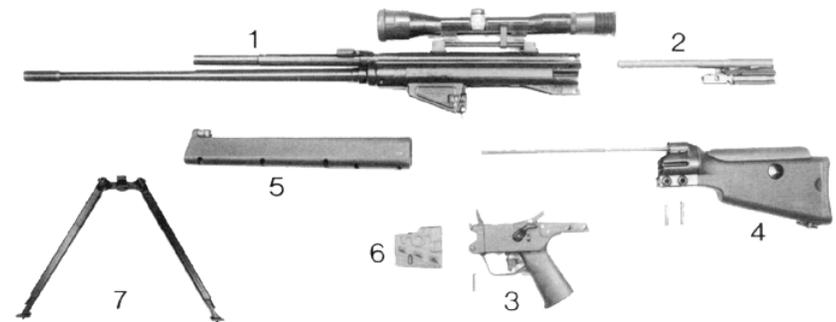


Fig. 2: Exploded view of assembly groups

Description of the assembly groups:

Group 1: Receiver with barrel, cocking device, telescopic sight mounting and telescopic sight.

The receiver connects the barrel, cocking device and telescopic sight mounting with the attached telescopic sight, and all other assemblies are either contained in the receiver or are attached to it.

The barrel is press-fitted into the barrel extension and fixed in place by pins. The cocking device is located above the barrel and is used for manually cocking and loading the weapon and for securing the bolt in its rear-most position.

The magazine catch/release lever is located on the left side of the magazine well. The bolt locking forward assist fitted behind the ejection port is used as an aid for the low noise locking of the bolt system.

A telescopic sight, 10x, and with 10 range setting, 100-1000 m, is attached on a mounting to be fixed in two recesses on top of the receiver. This mounting also permits attaching of all other types of daylight and night-sighting devices, which have STANAG fitting dimensions.

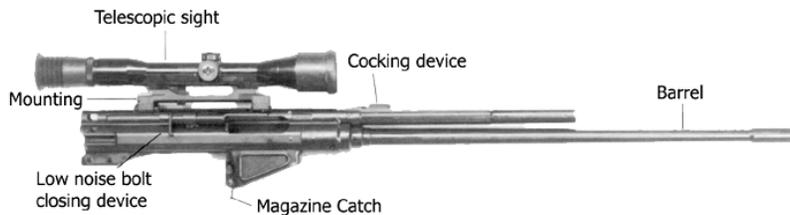


Fig. 3: Receiver with barrel, viewed from right-hand side

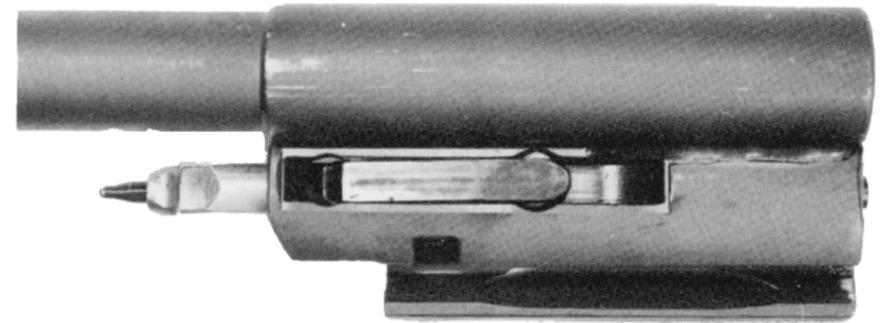


Fig. 35: Insert locking piece

Mount the bolt head on the locking piece so that the sloping surface is located in front of the bolt head-locking lever.



Fig. 36: Mounted bolt head

Press the bolt head against the bolt head-locking lever up to the bolt head carrier. Turn the bolt head to the right until resistance can be perceived and the bolt head-locking lever rests against the next surface. Pull the bolt head forward as far as it will go until both locking rollers can fully engage in the receiver.

Turn the bolt head clockwise until stop, i.e. until the sliding surfaces of bolt head and bolt head carrier are flush.

Stripping the bolt assembly

Turn bolt head to the left by 90 degrees and remove it from the bolt head carrier.



Fig. 33: Turning the bolt head

Remove locking piece, firing pin and firing pin spring.



Fig. 34: Removing the bolt components

The bolt system must be re-assembled in the reverse order of operations.

Insert the firing pin with spring and the locking piece into the hole in the bolt head carrier so that the lug on the locking piece goes into the recess in the hole. Press the locking piece all the way in and turn it to the right until its narrow side comes to rest under the bolt head locking lever.

Group 2: Bolt System

The bolt system is housed and guided in the receiver. In conjunction with the cartridge case it obdurates the chamber to the rear. It feeds and fires the cartridge, extracts and ejects the empty case after firing and cocks the hammer.

The bolt assembly comprises:

1. Bolt head carrier with bolt head locking lever.
2. Bolt head with locking rollers, extractor and extractor spring
3. Locking piece
4. Firing pin spring
5. Firing pin

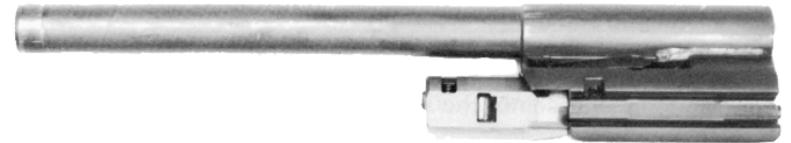


Fig. 4: Bolt system

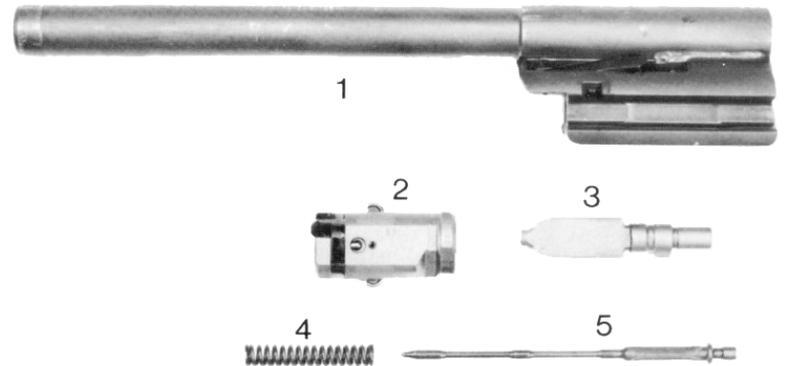


Fig. 5: Exploded view of bolt assembly

Group 3: Pistol grip and trigger assembly

The pistol grip is hinged to the receiver and can be removed from it. It takes the trigger assembly housing with the trigger and safety components. The safety axle joins pistol grip and trigger assembly housing.

The pistol grip with trigger assembly comprises:

1. Pistol grip
2. Trigger assembly-housing, complete
3. Safety axle
4. Selective fire/safety lever
5. Trigger shoe



Fig. 6: Pistol grip with trigger assembly

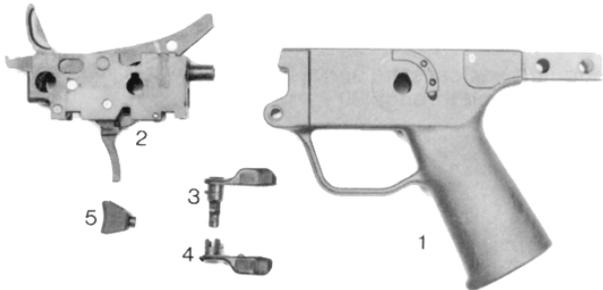


Fig. 7: Pistol grip with trigger assembly, dismantled



Fig. 32: Turning the bolt prior to removal of hand guard

Group 4: Butt stock

Put the weapon at safe!

Remove the magazine.

Unload the weapon. Pull back cocking lever, make sure that the chamber is empty, and let cocking lever snap forward again.

Remove both retaining pins from the back plate and slide off the butt stock



Fig. 30: Removing the butt stock

Remove pistol grip retaining pin and take off pistol grip.

Pull back bolt assembly by means of the cocking lever and take it out of the receiver

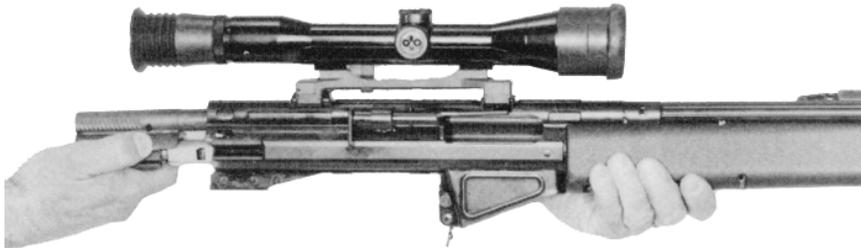


Fig. 31: Removing the bolt assembly

To take off the hand guard use a screwdriver and press the bolt back as far as it will go, and then turn the bolt by 90 degrees. Finally draw the hand guard off the barrel over the muzzle.

The butt stock with back plate encloses the receiver at the rear end. It is joined to the receiver by two locking pins. The back plate carries the recoil spring guide rod with the recoil spring, the buffer device and the butt stock.

Mounted on the comb of the butt stock is the cheekpiece, which can be adjusted for elevation. The butt plate at the rear end of the stock is length-wise adjustable.

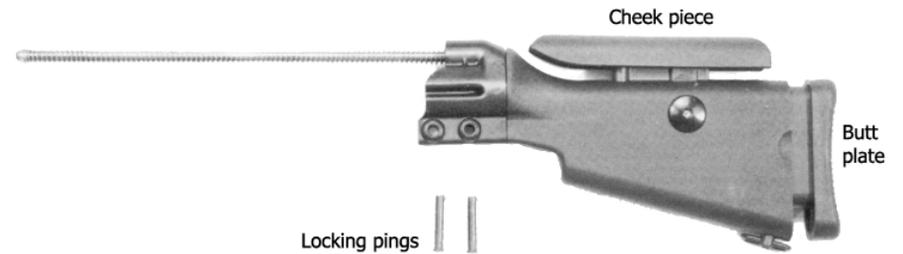


Fig. 8: Butt stock

Group 5: Hand guard

The removable hand guard encloses the barrel from below. It is secured to the receiver by rotating the bolt through 90 degrees.



Fig. 9: Hand guard

Group 6: Magazine

Magazines for 5 rounds are available. Optionally, magazines for 20 rounds can be used.

The magazine is composed of:

1. Magazine housing
2. Follower with follower spring
3. Magazine floor plate



Fig. 10: Magazine 5 rounds

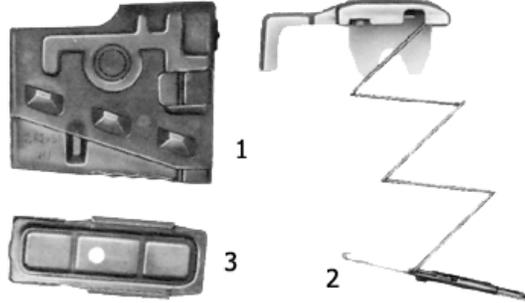


Fig. 11: Magazine 5 rounds, dismantled

Functioning of the bolt system

The weapon is loaded, cocked and the safety-catch is released.

Squeezing the trigger released the hammer, which strikes against the firing pin. The cartridge is ignited. The expanding gases drive the bullet forward. Simultaneously these gases also exert pressure on the cartridge case. The forces, which consequently act on the bolt head face, are transmitted partially via the locking rollers to the receiver, and partially via the locking piece to the bolt head carrier. The balanced angular ratio of locking piece and barrel extension results in a delayed recoil motion of the bolt head.

This design concept ensures that the bolt keeps the barrel locked until the projectile has cleared the muzzle.

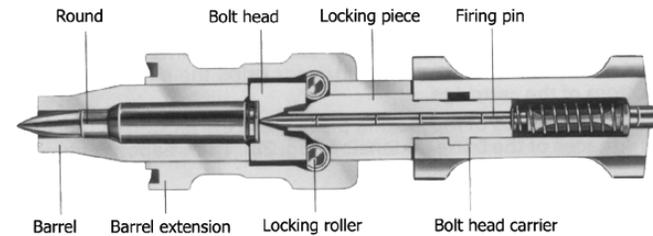


Fig. 28: Bolt system in locked position

When the locking roller has fully entered the bolt head recesses, the bolt is able to slide further to the rear. The cartridge case is ejected and the hammer is cocked again.

The simultaneously compressed recoil spring returns the bolt to its forward position, and thereby the next following cartridge is fed from the magazine into the chamber. The extractor grips the extraction groove at the bottom of the cartridge.

The sloping surfaces of the locking piece press the locking rollers onto the recoil surfaces of the barrel extension. The weapon is again ready to fire.

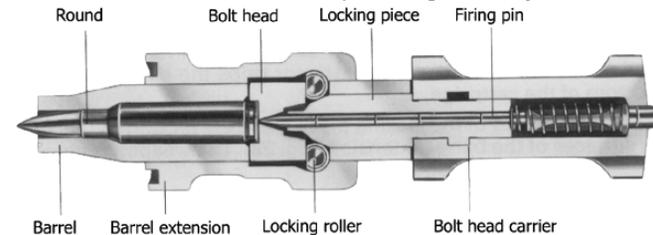


Fig. 29: Bolt system in unlocked position

Stripping the weapon for cleaning

Set safety/fire selector lever on "0". The trigger can no longer be operated by the weapon can be cocked in the safe condition.

Inserting and removing the magazine

Put the weapon at safe!

Insert magazine into the magazine well. The magazine catch must lock the magazine audibly into position



Fig. 26: Inserting the magazine

To remove the magazine, actuate the magazine catch.



Fig. 27: Removing the magazine

Group 7: Bipod

The bipod is attached on the T-way of the hand guard. Thus the point of support is variably adjustable. The bipod supporting legs are vertically adjustable at 3 different lengths and can be folded up when carrying or transporting the weapon.

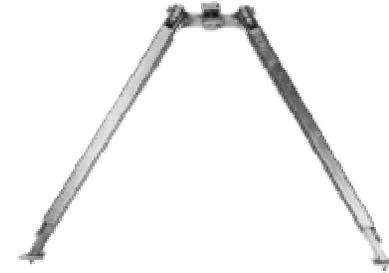


Fig. 12: Bipod

Handling and operation

Adjusting the butt stock

In order to perfectly fit the weapon to the firer, the length and height of the butt stock can be adapted to his physical measurements.

To adjust the length of the butt stock, use the hexagon socket screw key (Allen key) to loosen the clamping screw, and rotate the butt plate until it reaches a suitable length. Subsequently retighten the clamping screw with the Allen key.



Fig. 13: Adjusting the length of the butt stock

To adjust the height of the butt stock comb or cheekpiece, use the Allen key to loosen the clamping screw. The spring pressure will now force the cheekpiece into the highest position. Push it back down to the required height: and use the Allen key to lock it into place



Fig. 14: Adjusting the height of the cheekpiece

Adjusting the trigger shoe



Noise-damped cocking of weapon

To quietly cock the weapon, the cocking lever must never snap forward but slowly be eased forward instead. To completely close the bolt system, press the low noise bolt-closing assistant forward.

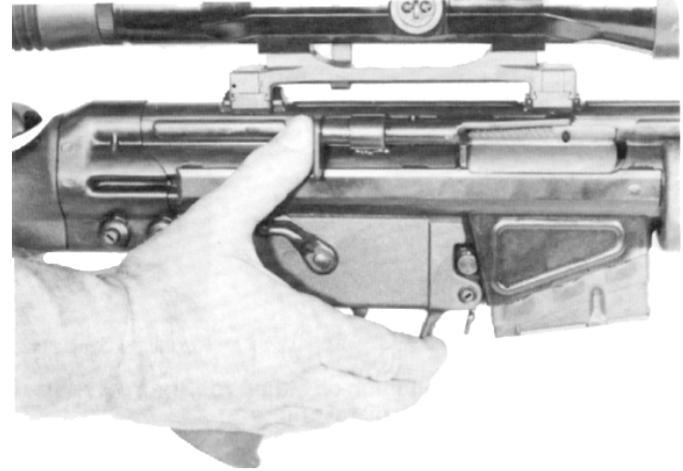


Fig. 23: Operating the low noise closing assistant

Safety device features

The safety/fire selector lever is located on both sides of the pistol grip and can be set at:

“0” = Safe, “1” = Single fire.

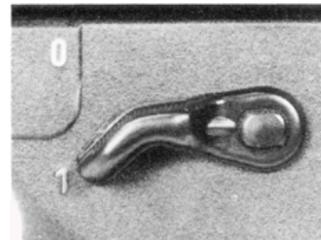


Fig. 24: “0” = Safe

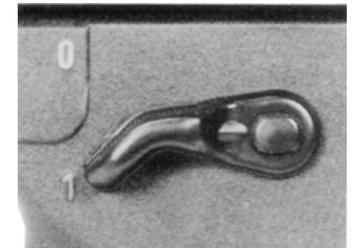


Fig. 25: “1” = Single fire

To recognize the respective condition on either side, the figures are marked also on the right-hand side of the pistol grip.

Put the weapon at safe!



Loading/cocking the weapon

Put the weapon at safe!

With the left hand pull back the cocking lever, and engage it in the recess in the cocking lever housing.



Fig. 21: Pulling back the cocking lever

Insert filled magazine into magazine well. Magazine catch must lock the magazine audibly into position.

Let cocking lever snap forward from its rearmost position. The weapon is loaded/cocked and put at safe.

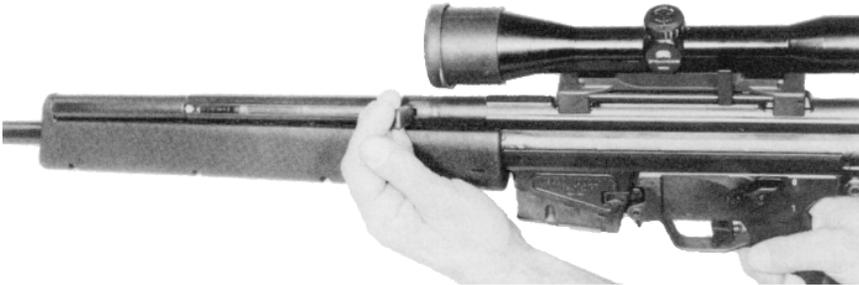


Fig. 22: Releasing the cocking lever to snap forward

Use the Allen key to loosen the trigger shoe. Move the shoe into the required position and lock it into position.



Fig. 15: Adjusting the trigger shoe

Attaching the bipod

Insert the bipod into T-guide way of the hand guard so that the bipod legs point to the rear.

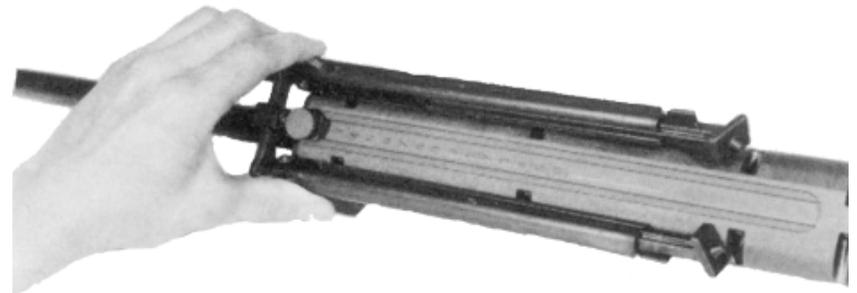


Fig. 16: Attaching the bipod

Move bipod legs in arrow direction disengage the legs and fold them down.

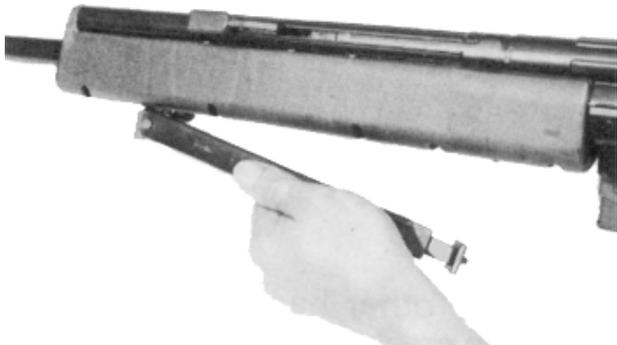


Fig. 17: Folding down bipod legs

To adjust the point of support, loosen the knurled screw, put the bipod in appropriate position and retighten the knurled screw.

To extend the bipod legs, pull same downward, and prior to telescoping the legs, lift the catch lever.



Fig. 18: Telescoping the bipod legs

Loading the magazine

Hold the magazine with one hand whilst the other hand feeds the cartridges into the magazine opening. The thumb presses the top round down below the magazine lips.

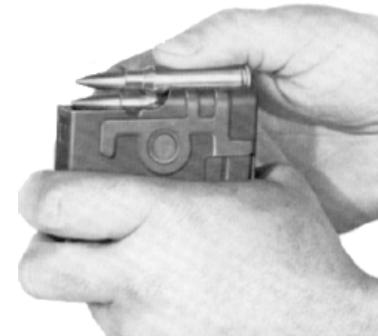


Fig. 19: Filling the magazine

Emptying the magazine

Hold the magazine with one hand with the bullets pointing in forward direction. Press down the lower of the two visible rounds using a chip of wood or a separate cartridge. The top round will then fall out by itself.

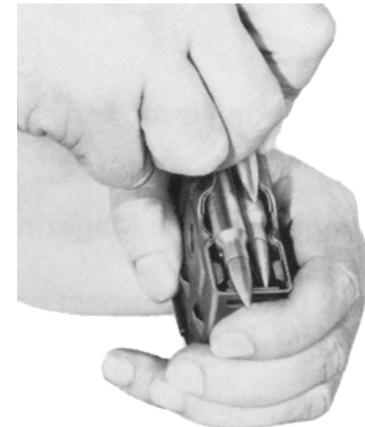


Fig. 20: Emptying the magazine